

Sakuna Harinda Jayasundara

Software & AI Engineer

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New Zealand Post-Study Work Visa holder — full working rights, no current or future sponsorship required.

Professional Summary

Software & AI engineer with 5+ years of industry and research experience building scalable, production-grade systems across backend development, machine learning, and automation. Brings 8+ years of experience in Python, Java, and C/C++ development, along with extensive work across agentic AI, agentic security, modern ML and MLOps frameworks, continuous integration and delivery (CI/CD) pipelines, and test automation. Ph.D. from the University of Auckland, with research spanning deep learning, natural language processing, cybersecurity, and human-computer interaction (HCI). Focused on applying data-driven and research-informed approaches to solve real-world engineering problems.

Technical Skills

AI Engineering & Agentic Systems: LangGraph, CrewAI, AutoGen, Google ADK, MCP, RAG, AI Evaluation, AI Agents, Agentic AI security

Languages: Python, Java, C/C++, Go, C#/.NET, TypeScript, Dart, CSS

Backend & APIs: Spring Boot, FastAPI, REST, SOAP, JSON-RPC, microservices, Cloudflare

Machine Learning & Deep Learning: PyTorch, TensorFlow, Keras, scikit-learn; model fine-tuning, from-scratch architecture implementation (reimplementing layers from papers), natural language processing (NLP), computer vision

Data: SQL (PostgreSQL), MongoDB, Neo4j, Neon, Supabase/Firebase

Cloud & DevOps/MLOps: AWS, Azure, Docker, Kubernetes, Jenkins, MLflow, Airflow, GitHub Actions, Git

AI Dev Tools: Claude, GitHub Copilot, Cursor

Experience

Doctoral Researcher

Oct 2022 – Jan 2026

University of Auckland | Auckland, NZ

- Designed transformer-based ML pipelines that convert natural-language requirements into structured, validated access control policies, reaching approximately 80% F1-score through context retrieval, generation, validation, and human-in-the-loop feedback.
- Fine-tuned and continually pre-trained off-the-shelf language models and built deep learning architectures from scratch in PyTorch, including reimplementing model layers directly from scientific papers where no public implementation existed.
- Designed ML-based mechanisms that support automatic error detection and recovery, enabling safe deployment of AI-generated security policies in high-risk environments.
- Conducted empirical user studies with 19 professional policy implementers, demonstrating improved accuracy, efficiency, trust, and adoption potential compared to existing approaches.
- Produced comprehensive analyses and datasets that address long-standing research gaps in access control policy generation.

Professional Teaching Fellow

Nov 2022 – Present

University of Auckland | Auckland, NZ

- Prepare and deliver lectures and tutorials for undergraduate and postgraduate courses, including Data Structures & Algorithms, Software Engineering, Cryptographic Management, and Java Programming for Industry.
- Designed course materials and built autograded programming assignments with interactive learning tools, supporting consistent assessment across large student cohorts (approximately 300).
- Supervise examinations and assess assignments and projects, ensuring fair and consistent evaluation.

Software Engineer (SDET)

Jun 2022 – Oct 2022

H2O.ai | Remote

- Designed and implemented end-to-end test automation pipelines using Python, Jenkins, and Groovy, reducing manual testing effort and increasing release velocity roughly by 30%.
- Led the architecture of a reusable test automation framework, defined the coding standards, and shaped the automation roadmap for cross-team use.
- Designed, developed, and maintained web applications supporting internal and external ML workflows.

- Collaborated with engineering teams to integrate automation into CI/CD workflows, improving code quality and shortening time-to-deployment for key features.

Software Engineer

Jul 2021 – Jun 2022

Axiata Digital Labs | Colombo, Sri Lanka

- Designed, developed, and maintained backend RESTful and SOAP APIs in Java and Spring Boot for customer-facing services tied to Celcom Malaysia, ensuring high reliability and clean integration with existing telecommunications systems.
- Designed an anomaly detection system with OpenTelemetry and ML models, enhancing production observability and enabling the early detection of 300+ critical system anomalies.
- Developed an NLP-based repository classifier to automatically surface relevant public GitHub projects, reducing manual competitive-analysis workload.

Intern Electronics Engineer

May 2019 – Dec 2019

Paraqum Technologies | Colombo, Sri Lanka

- Developed a GTP (GPRS Tunnelling Protocol) packet analysis tool and test environment for inspecting and debugging mobile core network traffic.
- Built a load-balancing module to monitor network interfaces and manage traffic; optimized existing C++ modules for responsiveness and reliability.

Projects

Marigold — Wedding Planning Platform

2026 – Present

Full-stack wedding planning web application designed and built end to end with AI-led development, taking it from concept and design through to a working, deployed product. (Claude code, Neon, Clerk, Cloudflare, Playwright, Astro, React, Tailwind CSS)

Helixar.ai — Agentic AI Security Platform

2026 – Present

Contributing to Helixar, a control plane for enterprise AI agents delivering governance, compliance, and runtime security, including agent identity and scope enforcement, behavioural monitoring, and tamper-evident audit and delegation provenance for autonomous LLM agents. (Python, TypeScript, LangChain, MCP, LLM agents)

AgenticSLR — Agentic Systematic Literature Review Platform

2025 – Present

Web-based agentic platform automating systematic literature reviews to cut researcher workload. (LangGraph, LangChain, FastAPI, React, TypeScript)

Ragatouille — Open-Source RAG Guide

2024

Comprehensive open-source guide to building Retrieval-Augmented Generation systems with Langgraph and Neo4j. **Featured on LangChain's official LinkedIn page (Link).** (Python, Langgraph, Neo4j, NLP)

Education

Ph.D. in Computer Science

Oct 2022 – Jan 2026

University of Auckland | Auckland, NZ

- Researched human-centric automated access control policy generation using large language models.
- Three publications (one flagship cybersecurity conference, two Q1 journals), two under review. Full list on [Google Scholar](#).

B.Sc. (Hons.) in Electronics & Telecommunication Engineering

2016 – 2021

University of Moratuwa | Colombo, Sri Lanka

- Attained a GPA of 3.92/4.2, obtaining a first class.
- Dean's List Honouree, recognised in all four academic years of the B.Sc. program.
- Developed a deep learning-based maritime surveillance software for the Sri Lanka Navy to detect suspicious activities in the sea using PyTorch and PyQt. The project won the 2nd runner-up in the National ICT Awards for the best university project.

Honours & Awards

- ESET Chillisoft Scholarship in Cybersecurity (2022)
- MBIE Artificial Intelligence for Human-Centric Security Project Scholarship (2022)
- 2nd Runner-Up, National ICT Awards — Best University Project (2021)

References

The references will be provided upon request.